

Claims.

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1. Rotor for a high speed permanent magnet motor comprising a central spindle (20), a plurality of magnet discs (21) stacked on said spindle (20), said spindle (20) having a clamping device (24-26,28) for exerting an axial clamping force on said magnet discs (21), thereby forming an axially pre-tensioned disc packet, characterized in that between at least every second magnet disc (21) and /or between one magnet disc (21) and said clamping device (24-26,28) there is located a reinforcement disc (23) of a non-magnetic high-strength material, each reinforcement disc (23) being clamped by said axial clamping force between said at least every second magnet disc (21) or between one magnet disc (21) and said clamping device (24,26,28), thereby accomplishing a frictional engagement between said reinforcement discs (23) and said magnet discs (21) for transferring centrifugal forces from said magnet discs (21) to said reinforcement discs (23), thereby relieving said magnet discs (21) of tensile stress.
 2. Rotor according to claim 1, wherein a reinforcement disc (23) is located between every two adjacent magnet discs (21).
 3. Rotor according to claim 1 or 2, wherein each one of said magnet discs (21) comprises at least one electrically insulating layer (22).
 4. Rotor according to claim 1, wherein said reinforcement discs (23) are flat in shape.
 5. Rotor according to claim 1, wherein said reinforcement discs (23) consists of a high-strength metal.

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6. Rotor according to claim 1, wherein said reinforcement discs (23) consists of a ceramic material.
 7. Rotor according to claim 1, wherein said magnet discs (21) are radially pre-tensioned by a pre-assembly heat treatment of said reinforcement discs (23).
 8. Rotor according to claim 7, wherein the thermal coefficient of expansion for the material of the reinforcement discs (23) is higher than that of the material of the magnet discs (21), and said heat treatment comprises a heating-up of the complete rotor assembly before applying said axial clamping force.

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